

# NJDOT Bureau of Research

“Turning Problems into Solutions”

# ***What We Do***

**Delivers quality research and technology transfer solutions through a customer-focused program.**

**Discover new materials, Improve processes, and Refine systems that:**

- **Enhance the durability and efficiency of our transportation infrastructure,**
- **Enhance public safety,**
- **Improve mobility,**
- **Reduce congestion,**
- **Improve and protect the environment, and**
- **Introduce new innovative technologies**

# ***Who Do We Do It For***

## ***Our Customers***

**Every unit within**

- **NJ Department of Transportation,**
- **Motor Vehicle Commission, and**
- **NJ Transit**

# ***How Do We Do It***

## **Pipeline 3**

- **Surveys/Literature Searches**

## **Pipeline 2**

- **Rapid Research Demonstration Studies**
- **Research Consultant Services**

## **Pipeline 1**

- **Full Research Studies**

# ***How Do We Do It***

- **In-house and contract surveys**

**National Listserv, Eagleton Institute**

- **In-house and contract literature searches**

**TRB (TRIS), RIPS, NCHRP, Dialog,  
Internet, NJDOT Library**

- **Rapid Research Demonstration Projects**

**Materials, Design, Construction and  
Maintenance Practices**

- **Research Consulting Services**

- **Contract Research through University Partners**

**Rutgers, NJIT, UTRC, Rowan, and Stevens**

# ***Types of Research***

- **Infrastructure**

**Design, Materials, Construction, Maintenance**

- **Planning**

**ITS/Congestion Mitigation, Traffic Simulations**

- **Safety**

**Effectiveness of various treatments**

- **Environmental**

**Effectiveness of various treatments**

- **Human Factors**

**Computer Testing, Simulation and Physical Testing**

- **Policy Research**

**Data Collection and Evaluation**

# ***Project Highlights***

## **Infrastructure**

- **Evaluation of Load Resistance Factor Design (LRFD)**
- **Design and Implementation of Innovative Bridge Approach Slab**
- **Implementation of Inertial Profiler Technology for Ride Quality**
- **Material Characterization and Seasonal Variation of Implementation of Mechanistic Pavement Design**

# ***Project Highlights***

## Planning

- **Innovative Container Mover Technologies**
- **Cost of Moving People**
- **Operation Improvements at Traffic Circles**
- **Alternate Performance Measures for Evaluating Congestion**

# ***Project Highlights***

## **Safety/Human Factors**

- **New Concepts in Truck Mounted Attenuator Development**
- **Evaluation of Cross-Median Crashes to Prevent Fatal and Injury-Causing Guide Rail Accidents**
- **Evaluation of Shoulder Rumble Strips and Bicyclists**
- **Fatigue Management for Rail Operators**
- **Impact of Mode and Mode Transfer on Commuter Stress**
- **Services to Limited English Proficiency Travelers**

# ***Project Highlights***

## Environmental

- **Evaluation of Pavement-Tire Noise**
- **Runoff Collection System**

# ***Project Highlights***

## Policy Research

- **Construction Penalties for Late Running Construction**
- **MVC Customer Satisfaction Survey/Focus Groups**
- **Driver Distraction Survey**
- **Evaluation of Personal Rapid Transit Technology**

# Research Annual Schedule

## Annual Research Schedule

|                                                                                    | <u>Current</u>          |
|------------------------------------------------------------------------------------|-------------------------|
| Solicitation of Problem Statements                                                 | Nov 15 – Jan 1          |
| Review, Clarify, & Prioritize Problem Statements                                   | Jan 1-Jan 31            |
| <b>RUC Review</b>                                                                  | <b>Feb 1-Feb 15</b>     |
| Develop Scope of Work/RFP and Literature Review                                    | Feb 15 – Mar 31         |
| Distribute Scope of Work and RFP                                                   | April 1                 |
| Receive Initial Proposals                                                          | <b>July 1</b>           |
| Review & Select Proposal                                                           | July 1-Aug 15           |
| Receive Final Proposal                                                             | Aug 15 – <b>Sept 15</b> |
| Research Activity Sheet for FHWA                                                   | <b>Sept 1</b>           |
| Research Project Manager and PI Develop Project Work Plans and Implementation Plan | Sept 15 – Jan 1         |
| Develop Annual Work Program Initial draft to FHWA                                  | Sept 15-Sept 30         |
| Approve Annual Work Program RUC & FHWA Review                                      | Oct 1-Oct 15            |
| Prepare & Issue Task Orders Issue letter of intent ASAP                            | Oct 15-Dec 31           |
| Effective Start Date                                                               | <b>January 1</b>        |

Revised as of 3/15/2001

# ***Research Quarterly Meetings***

- Review Progress for the Last Quarter
- Review the Planned Activities of the Next Quarter
- Discuss Problem Areas
- Plan for Implementation
- Review Budget and Schedule

# ***Research INTRANET Web Site***

**The INTRANET site provides links to information on**

- **TRB, NCHRP, LTPP Announcements and Surveys**
- **Research Library/Information Center**
- **Annual Research Problem Solicitation**
- **Annual Research Showcase**

# ***Research INTERNET Web Site***

## **Research Internet Site**

- Useful links to National, State, and local Transportation Research sites
- Summaries of ongoing studies, and schedule of quarterly meetings, and quarterly progress reports.
- Searchable database for selecting abstracts, tech briefs, and full-text final reports for completed studies and
- Announcements of special events or research news, such as the Annual Research Showcase

**[<http://www.stevens.edu/engineering/njdot/>].**

**Research customers may also use the site to submit a Research Problem Statement using the online or a hard copy form.**